

IN THE CLAIMS

1. (Original) A process for producing phosgene, comprising:

introducing a carbon monoxide stream to a metal oxide impregnated activated carbon;

reducing a hydrogen sulfide concentration in the carbon monoxide stream to produce a cleaned stream, wherein a cleaned stream hydrogen sulfide concentration is less than or equal to about 20 ppm; and

reacting carbon monoxide in the cleaned stream with chlorine to produce phosgene.

2. (Currently Amended) A process for producing phosgene, comprising: ~~The process of Claim 1, further comprising:~~

introducing the carbon monoxide stream to activated carbon that has not been impregnated with a metal oxide prior to introducing the carbon monoxide stream to the metal oxide impregnated activated carbon; and

introducing a carbon monoxide stream to a metal oxide impregnated activated carbon;

reducing a concentration of at least one of carbonyl sulfide and carbon disulfide in the carbon monoxide stream;

reducing a hydrogen sulfide concentration in the carbon monoxide stream to produce a cleaned stream, wherein a cleaned stream hydrogen sulfide concentration is less than or equal to about 20 ppm; and

reacting carbon monoxide in the cleaned stream with chlorine to produce phosgene.

3. (Original) The process of Claim 2, further comprising:

regenerating the metal oxide impregnated activated carbon by:

ceasing the introduction of the carbon monoxide stream to the metal oxide impregnated activated carbon;

introducing an inert gas stream comprising oxygen to the metal oxide impregnated activated carbon, wherein at least one of the metal oxide impregnated activated carbon is heated to a temperature of greater than or equal to about 350°C or the inert gas stream is at a temperature of greater than or equal to about 350°C; and

removing sulfur dioxide from the metal oxide impregnated activated carbon.

4. (Original) The process of Claim 3, wherein the oxygen is present in the inert gas stream in an amount of about 0.2 vol% to about 2 vol%, based upon a total volume of the inert gas stream.

5. (Currently Amended) ~~The process of Claim 1~~ A process for producing phosgene, comprising:

introducing a carbon monoxide stream to a metal oxide impregnated activated carbon, wherein the metal oxide is selected from the group consisting of copper oxide, lanthanum oxide, zinc titanate, iron oxides, calcium oxide, silica, aluminum oxide, and combinations comprising at least one of the foregoing metal oxides;

reducing a hydrogen sulfide concentration in the carbon monoxide stream to produce a cleaned stream, wherein a cleaned stream hydrogen sulfide concentration is less than or equal to about 20 ppm; and

reacting carbon monoxide in the cleaned stream with chlorine to produce phosgene.

6. (Original) The process of Claim 5, wherein the metal oxide comprises copper oxide.

7. (Original) The process of Claim 1, wherein the hydrogen sulfide concentration is less than or equal to about 10 ppm.

8. (Original) The process of Claim 7, wherein the hydrogen sulfide concentration is less than or equal to about 2 ppm.

9. (Original) The process of Claim 8, wherein the carbon monoxide stream introduced to the metal oxide impregnated activated carbon has a hydrogen sulfide concentration of greater than or equal to about 100 ppm.

10. (Original) The process of Claim 1, further comprising removing water from the cleaned stream to form a dried stream, prior to reacting the carbon monoxide with the chlorine.

11. (Original) The process of Claim 10, further comprising mixing the dried stream with the chlorine prior to introducing the dried stream to a reactor.

12. (Currently Amended) ~~The process of Claim 1, further comprising~~ A process for producing phosgene, comprising:

introducing a carbon monoxide stream to a metal oxide impregnated activated carbon;

reducing a hydrogen sulfide concentration in the carbon monoxide stream to produce a cleaned stream, wherein a cleaned stream hydrogen sulfide concentration is less than or equal to about 20 ppm;

introducing the cleaned stream to an activated carbon that has not been impregnated with a metal oxide, prior to reacting the carbon monoxide with the chlorine, and;

reacting carbon monoxide in the cleaned stream with chlorine to produce phosgene.

13. (Original) The process of Claim 1, further comprising adjusting a moisture content of the carbon monoxide stream prior to introducing it to the metal oxide impregnated activated carbon.

14 – 18. (Cancelled)

19. (New) A process for producing phosgene, comprising:

adjusting a moisture content of the carbon monoxide stream to form an adjusted stream;

introducing the adjusted stream to a metal oxide impregnated activated carbon, wherein the metal oxide is selected from the group consisting of copper oxide, lanthanum oxide, zinc titanate, iron oxides, calcium oxide, silica, aluminum oxide, and combinations comprising at least one of the foregoing metal oxides;

reducing a hydrogen sulfide concentration in the carbon monoxide stream to produce a cleaned stream, wherein a cleaned stream hydrogen sulfide concentration is less than or equal to about 20 ppm;

removing water from the cleaned stream to form a dried stream; and

reacting carbon monoxide in the dried stream with chlorine to produce phosgene.

20. (New) The process of Claim 19, further comprising mixing the dried stream with the chlorine prior to introducing the dried stream to a reactor.

21. (New) The process of Claim 19, wherein the metal oxide comprises copper oxide.